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(54) Title: USE OF COMPOUNDS HAVING THE BIOLOGICAL ACTIVITY OF VASOACTIVE INTESTINAL PEPTIDE FOR THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

(57) Abstract: The present invention relates to the use of peptides and pharmaceutical compositions containing said peptides, that are highly biologically and pharmacologically active as therapeutic drugs for the treatment of diseases related to chronic obstructive pulmonary disease (COPD) which is preferably not correlated to pulmonary hypertension symptoms. Furthermore, the invention discloses the use of said peptides for another lung disease which is acute (adult) respiratory distress syndrome (ARDS). It could be shown that the known naturally occurring peptides "vasoactive intestinal peptide (VIP)" and "pituitary adenylate cyclase-activating polypeptide (PACAP)" as well as analogues or derivatives of VIP and PACAP can be successfully used for the treatment of said diseases.

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CH 03/00056

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/575 A61K38/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

BIOSIS, CHEM ABS Data, WPI Data, EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 10598 A (MICROBIOLOGICAL RESEARCH AUTHORITY) 2 March 2000 (2000-03-02) the whole document	1-7
X	WO 96 32954 A (BRIGHAM AND WOMEN'S HOSPITAL & BOSTON UNIVERSITY) 24 October 1996 (1996-10-24) the whole document	1-7
X	S I SAID & K G DICKMAN: "Pathways of inflammation and cell death in the lung: modulation by vasoactive intestinal peptide " REGULATORY PEPTIDES., vol. 93, 2000, pages 21-29, XP002253543 ELSEVIER SCIENCE BV., NL ISSN: 0167-0115 the whole document	1-8

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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

4 September 2003

Date of mailing of the international search report

24/09/2003

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>S I SAID ET AL.: "Excitotoxicity in the lung: N-Methyl-D-aspartate-induced, nitric oxide-dependent, pulmonary edema is attenuated by vasoactive intestinal peptide and by inhibitors of poly(ADP-ribose) polymerase "</p> <p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA., vol. 93, May 1996 (1996-05), pages 4688-4692, XP002212160 NATIONAL ACADEMY OF SCIENCE. WASHINGTON., US ISSN: 0027-8424 the whole document</p>	1-7
X	<p>J KINHULT ET AL.: "Pituitary adenylate cyclase-activating peptide inhibit neutrophil chemotaxis "</p> <p>PEPTIDES, vol. 22, 2001, pages 2151-2154, XP002253544 ELMSFORD, US ISSN: 0196-9781 the whole document</p>	1-6
X	<p>DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; Database accession no. PREV199191056096, 1989 IWANAGA T ET AL: "VASOACTIVE INTESTINAL PEPTIDE VIP PROTECTS AGAINST ACID - INDUCED ACUTE LUNG INJURY IN ISOLATED PERFUSED RAT LUNGS." retrieved from STN XP002200466 &amp; JPN J THORAC DIS, (1989) 27 (7), 789-795. ,  abstract</p>	1-7
P,X	<p>WO 02 43746 A (MONDOBIOTECH SA) 6 June 2002 (2002-06-06) the whole document</p>	1-24

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## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; LIN, YAOGUANG: "Vasoactive intestinal polypeptide prevents injury of pulmonary vascular permeability due to xanthine with xanthine oxidase" retrieved from STN Database accession no. 124:46159 CA XP002253545 &amp; CHINESE MEDICAL SCIENCES JOURNAL (1995), 10(3), 141-5 , 1995, abstract</p> <p>-----</p>	1-8

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CH 03/00056

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 15-21 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC 03/00056

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0010598	A	02-03-2000	AU 756063 B2	02-01-2003
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